# Shayan Chowdhury

AI, Data Science & Public Health     LinkedIn: shayanhchowdhury     Website: shayan.tech     Email: sc4040@columbia.edu

**EDUCATION: Columbia University, New York, NY**: BA Information/Computer Science & Public Health     **GPA: 3.95, Dean's List, Exp Grad: 2026**

    Selected Coursework: Artificial Intelligence, Intro to Computer Apps in Healthcare, Environmental Data Analysis, LLM Foundations and Ethics

    High School: Stuyvesant High School, New York, NY

## RESEARCH EXPERIENCE

**Researcher w/ Professor Luis Gravano, Department of Computer Science, Columbia University, New York**     **September 2023 – present**
- Identifying foodborne illness outbreaks linked to restaurants w/ NYC Dept of Health using algorithmic methods and ML models

**Research Technician, Fifer Lab, Columbia University Irving Medical Center, New York**     **August 2021 – September 2023**
- Helped improve access to low-cost technologies for preventing fetal miscarriages and stillbirths, especially in LMICs like India and South Africa
- Built self-supervised machine learning models w/ TensorFlow for clinical usage on real-time fetal and maternal electrocardiogram (ECG) data
- Developed and published on a signal processing algorithm to analyze fetal ECG signals for high-risk diabetes patients *(see publications below)*

**Director of Mentorship and Education, Coronavirus Visualization Team, Harvard University, Cambridge, MA**     **October 2022 – present**
- Mentoring students on research, data analysis, AI, and technical writing
- Connecting 280+ research students to professors and principal investigators at Columbia, Harvard, and other academic institutions

**Lead Data Analyst, a2i Programme, ICT Ministry / Cabinet Division / UNDP Bangladesh**     **March 2020 – January 2022**
- Appointed to the National COVID-19 Policy Dashboard Committee of the Bangladesh Government for the Ministries of Health and IT
- Developed COVID-19 data collection tools and modeled its spread to inform public policy on lockdowns, public health comms and healthcare decisions
- Analyzed data on tests, cases, deaths, hospitalizations, and mobility, and led presentations on policy recommendations to the Directorate General of Health Services, Institute of Epidemiology, and the Prime Minister with epidemiologists from Harvard, MIT, Columbia and UC Berkeley

**Software Developer, Migrant Nation Foundation, The Netherlands / UNDP Bangladesh**     **October 2019 – June 2020**
- Developed a pioneering "Right to Work" e-commerce marketplace for Rohingya refugees with UNDP, UNHCR, and WFP in Bangladesh to enable the refugees to produce and sell products to consumers worldwide on Amazon, Etsy, Alibaba, and other international markets
- Built a mobile app being used in the camps to pay hourly wages in accordance with the ILO's decent work practices

**Research Intern, Frank Lab: Nobel Laureate Joachim Frank, Columbia University, New York**     **September 2018 – November 2019**
- Created the highest resolution 3D reconstruction of 40S eukaryotic ribosome subunit to reverse engineer the mechanism of protein synthesis
- Fine-tuned bioinformatics tools to increase the accuracy of protein detection and reconstruction in noisy electron microscope images at 1.5 Å

**Machine Learning Project Lead, Google Mentorship Program, Google, New York**     **October 2018 – June 2019**
- Led a Stuyvesant HS team to develop a LSTM-based machine learning model w/ PyTorch capable of understanding human emotions from voice intonations for use in digital personal assistants, medical applications, and improving accessibility for those with speech disabilities

## ENTREPRENEURIAL EXPERIENCE

**Executive Director & Founder, Reach4Help, Montréal, Canada**     **March 2020 – present**
- Leading a team of 30+ coordinating humanitarian aid logistics for remote communities across 38+ countries
- Developed an open-source global map of aid, serving as the backbone for logistical coordination of volunteer help for 10K+ organizations through the COVID-19 pandemic, Mexican earthquake, California wildfires, Ukrainian invasion, Pakistan/Bangladesh floods, Türkiye/Syria earthquakes
- Raised $120K from Google for Nonprofits and $106K in in-kind donations from Google, Slack, Algolia, etc.
- Helped raise €170K+ for Ukraine medical relief w/ WEF + served 58K+ households w/ BRAC during floods in Bangladesh, Pakistan and India

**Global Shaper, Curator of NYC Queens Hub & Climate Reality Leader, World Economic Forum, Geneva, Switzerland**     **August 2021 – present**
- Selected as the youngest Global Shaper by the World Economic Forum for work on Reach4Help
- Led SupportUkraineNow projects reaching 1M+ Ukrainians on refugee aid, fundraising and mental health support as U.S. co-ambassador
- Won a grant from Al Gore's Climate Reality Project to scale up education policy solutions for 1800+ students in Bangladesh and now in NYC
- Elected to be Curator of the New York City Queens Hub for global representation and local leadership on hub projects

**PROGRAMMING / LANGUAGES:** Python, R, JavaScript/TypeScript, MATLAB, Java, C#, C++, Rust, Dart, SQL / Bangla (native), Spanish and Latin (int.)

**HONORS & AWARDS:** Climate Reality Corp Leadership Award by fmr. U.S. Vice President Al Gore ('22), Columbia University Distinguished New Student Scholarship ('22), Daniel Bergstein Memorial Scholarship ('19), AP Scholar w/ Distinction ('19), Gates Scholarship Finalist ('19), Elizabeth Piper Scholarship ('18), Stand Up to Cancer Award for Lung Cancer Research at the New York Genome Center and Weill Cornell Medical College ('17)

## SELECTED RESEARCH PUBLICATIONS (GOOGLE SCHOLAR)

- **Chowdhury S.,** Frasch M. G, Wu H., Lucchini M., Shuffrey L. C., Sania A., Malette C., Odendaal H. J., Myers M. M., Fifer W. P, Pini N. (2022). A Novel Method for the Extraction of Fetal ECG Signals from Wearable Devices. *44th Int'l IEEE* Engineering in *Medicine & Bio Conf. (EMBC)*.
- Mahmud, A. S., **Chowdhury, S.,** Sojib, K. H., Chowdhury, A., Quader, M. T., Paul, S., ... & Buckee, C. O. (2021). Participatory syndromic surveillance as a tool for tracking COVID-19 in Bangladesh. *Epidemics*, 35, 100462.
- Chadwick, F., Clark, J., **Chowdhury, S.,** … & Sania, A. (2022). Combining Rapid Antigen Testing and Syndromic Surveillance Improves Sensitivity and Specificity of COVID-19 Detection: A Community-Based Prospective Diagnostic Study. *Nature Communications*, 13, 2877.
- Ferguson E. A., Brum, E., Chowdhury, A., **Chowdhury, S.,** Kundegorski, M., … & Hampson, K. (2022). Modelling how face masks and symptoms-based quarantine synergistically and cost-effectively reduce SARS-CoV-2 transmission in Bangladesh. Epidemics, 40, 100592.
- Brum, E., Saha, S., Sania, …, **Chowdhury, S.,** Haddou, Y., Ferguson, E., Kundegorski, M., Purno, N., Tasneem, M., … Hampson, K. (2021). Surging COVID-19 in Bangladesh driven by B.1.351 variant. *Preprint for Lancet Global Health*.

## SPEAKING ENGAGEMENTS, EVENTS & PRESS COVERAGE

- Panelist, **"Bringing Health and Equity into Climate Action"** organized by **Accenture** and **World Economic Forum** in **New York**     **Sep 2023**
- Speaker, **Princeton University's Youth Climate & Conservation Summit (YCCS)** in **Princeton, New Jersey** on climate finance     **Apr 2023**
- Speaker, **The Aspen Institute's Future Leaders Climate Summit** in **Miami, Florida** on climate public policy leadership     **Mar 2023**
- Lead presenter and author, **International Society for Developmental Psychobiology (ISDP) Conference** in **San Diego, California**     **Nov 2022**
- Speaker, **"The Roadmap to Resources: How Reach4Help Leads People in Need"** at **Google HQ** in **Mountain View, California**     **Oct 2022**
- Speaker, **Climate Changemakers Digital Innovation for Youth Conference** at the **United Nations Headquarters** in **New York**     **Sep 2022**
- Speaker, **International Youth Conference** in **Cambridge, Massachusetts** on entrepreneurship and public policy advocacy     **Sep 2022**
- Lead presenter and first author, **44th Int'l IEEE Engineering in Medicine & Biology Conference** (EMBC) in **Glasgow, Scotland**     **Jul 2022**
- Exclusive feature in **The Daily Star**, the most widely circulated English newspaper in **Bangladesh**     **Mar 2022**